



Evidence for Mantle Exhumation along the Arabian Margin in the Kermanshah Area (Zagros, Iran)

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The Kermanshah Suture Zone (Zagros, Iran) provides an interesting opportunity to study the Neo-Tethys rifting and obduction processes, for which the local models haven't been revisited since the 80's. The stack of nappes coming from the Neo-tethyan domain and obducted over the Arabian plate during late Cretaceous exposes from SW to NE, radiolarian cherts, the Harsin peridotitic domain, the Bisitoun Lst block and the Saneh peridotites.

A new interpretation of the outcrops of Harsin area allows characterizing detachment faults between serpentinites and gabbros and overlying deep marine sediments (i.e.: cherts or pelagic Lst.) and pre-rift Lst (extensional allochthons). The setting can be interpreted as an extremely stretched amagmatic mantle-floored basin filled by radiolarites. Extensional allochthons are preserved pre-rift sediments and are made up of upper Triassic Lst. The radiolarites unconformably overlying the detachment have recently been dated as early Pliensbachian to early Turonian. This allows encompassing the onset of mantle exhumation stage between late Triassic and early Pliensbachian. Apart from its rather small extension, the structural position and the vertical movement deduced from existing stratigraphic descriptions, allow interpreting the Bisitoun platform as the sedimentary cover of a Hanging Wall Block "H Block", remnant of the stretching phase of the continental crust. However, the margin itself and the continental crust have not been mapped. They have likely been subducted and only the cap of the Bisitoun Block was preserved. These preliminary results lead us to re-interpret the geodynamic and structural evolution of this domain using recent models developed for magma poor passive margin.